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SCIENTIFIC RESEARCH ON PAPAVER BRACTEATUM 1/

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METHOD FOR THE DETERMINATION OF THEBAINE 2/

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1/ General note: The views expressed by collaborating scientists in their contributions to the programme are not necessarily shared by the Secretariat.

2/ In the report of the Second Working Group on Papaver bracteatum (document ST/SOA/SER.J/2), it was recommended that methods for the determination of thebaine in Papaver bracteatum should be compared and evaluated; to achieve this, it was decided that participants in the Working Group would forward their methods for publication in this series so that these could be tried out in the various laboratories.

3/ This paper was submitted by Mr. C. Candillon, Director of the Agricultural Department, Francopavot.

*/ Re-issued for technical reasons

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The method used by the laboratories of the Société Francopia is an application of ascending thin-layer chromatography as described by D. Neubauer and K. Mothes 4/.

The analytical procedure is as follows:

2 grammes of pulverized Papaver bracteatum is placed in a test tube and 25 ml of primary butanol (n-butanol) saturated with ammonia water is then added so as to obtain a pH of 8.5.

After vigorous mechanical stirring for 3 hours, the mixture is filtered through cotton wool and 5 µl is spotted on a plate of Silica gel Merck GF 254.

Reference solutions of thebaine base are spotted in the same way.

The volume of each solution spotted is 5 µl.

Reference solutions:

50 mg in 100 ml of n-butanol of which 5 µl correspond to 2.5 γ
100 mg in 100 ml of n-butanol of which 5 µl correspond to 5 γ
150 mg in 100 ml of n-butanol of which 5 µl correspond to 7.5 γ
200 mg in 100 ml of n-butanol of which 5 µl correspond to 10 γ

The components are separated in a saturated chamber by ascending chromatography using the 8:2 benzene-methanol system.

As revealed by Dragendorff's reagent according to Munier and Macheboeuf, the spots of thebaine appear red.

Comparison of the spots obtained with those of the reference solutions serves to indicate the thebaine content of the solution deposited.

This method of assay applied to capsules of Arya II from Iran, sample UNB-17, gives a concentration of 2.9%.

Taking into account the various analyses carried out, the use of this technique in a series of routine analyses would give for the same sample a result of between 2.8 and 3.2%.

4/ Planta Medica 9, 466 (1961).